

SUN-P5404

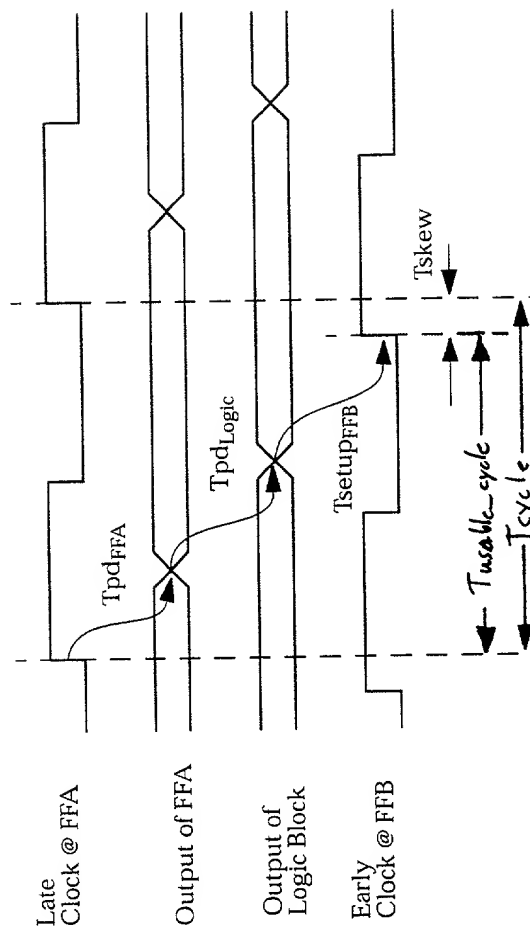
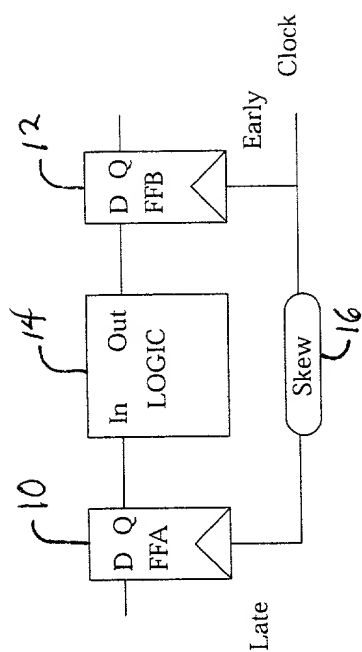


FIG. 1

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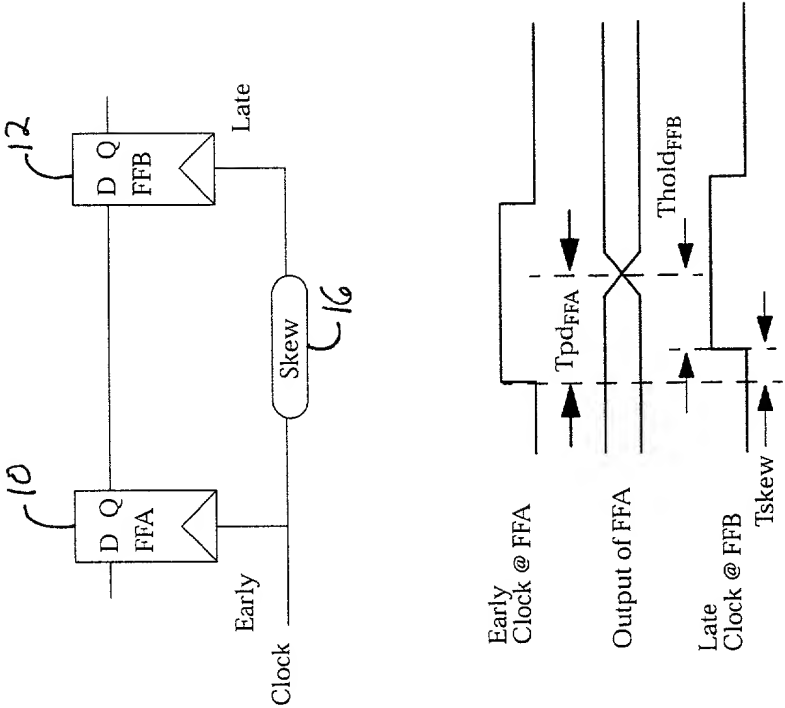


FIG. 2

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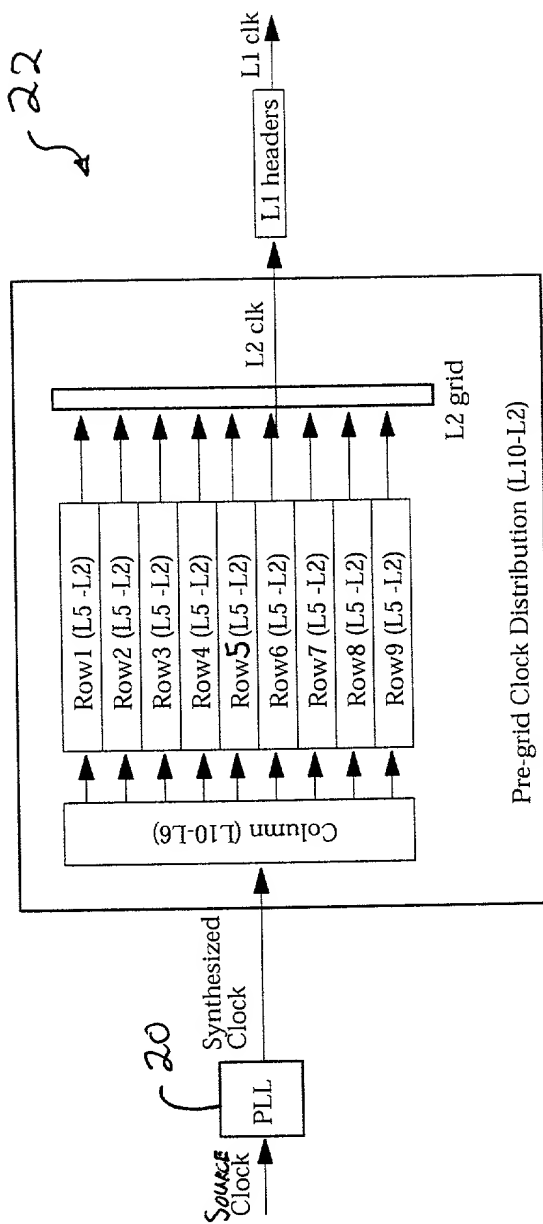


FIG. 3

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1. *Chlorophyll a* (Chl *a*) is the primary photosynthetic pigment in most plants and algae. It is a green pigment that absorbs light energy in the blue and red regions of the visible spectrum. Chl *a* is essential for the light-dependent reactions of photosynthesis, where it converts light energy into chemical energy.

2. *Chlorophyll b* (Chl *b*) is an accessory pigment found in green plants and algae. It is a yellow-green pigment that absorbs light energy in the blue and orange regions of the visible spectrum. Chl *b* transfers the absorbed energy to Chl *a* for use in photosynthesis.

3. *Carotenoids* are a group of pigments that include carotenes and xanthophylls. They are responsible for the yellow, orange, and red colors seen in autumn foliage. Carotenoids absorb light energy in the blue and green regions of the visible spectrum and transfer the energy to Chl *a*. They also play a role in protecting the photosynthetic apparatus from damage by reactive oxygen species.

4. *Xanthophylls* are a subset of carotenoids that are yellow in color. They are involved in the light-harvesting process and the dissipation of excess light energy as heat, a process known as non-photochemical quenching. This helps protect the plant from photodamage under high light conditions.

5. *Anthocyanins* are water-soluble pigments that give plants red, purple, and blue colors. They are not directly involved in photosynthesis but are thought to play a role in attracting pollinators and protecting plants from herbivores and environmental stress.

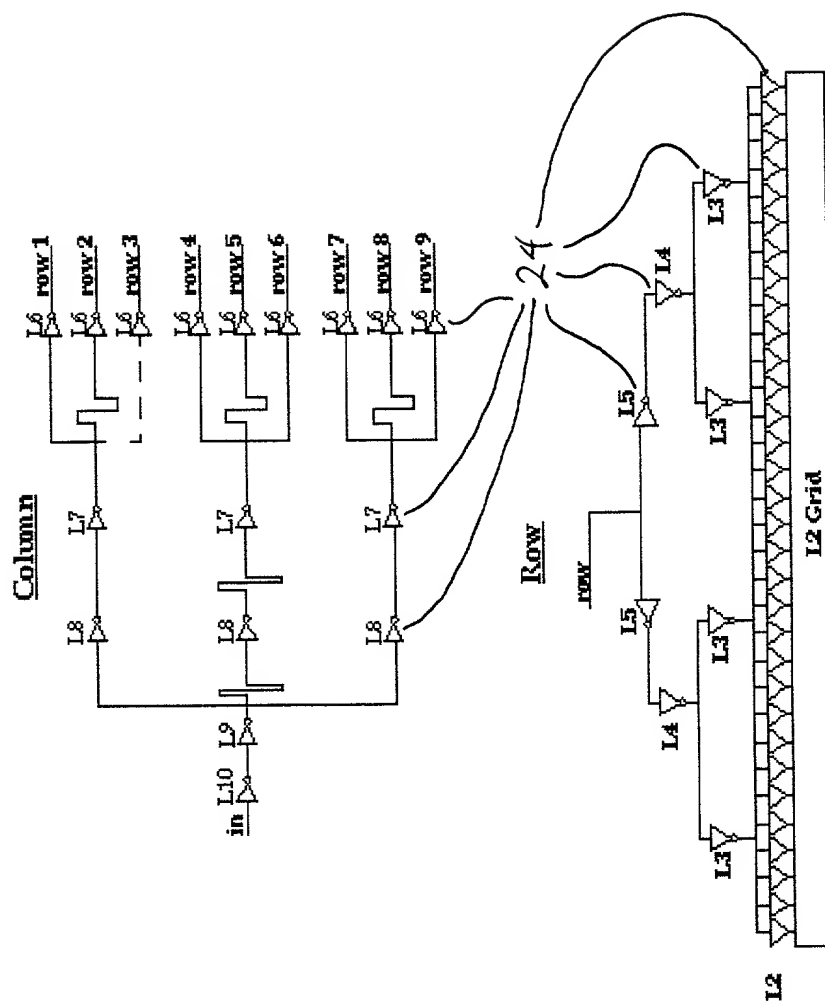


FIG. 4

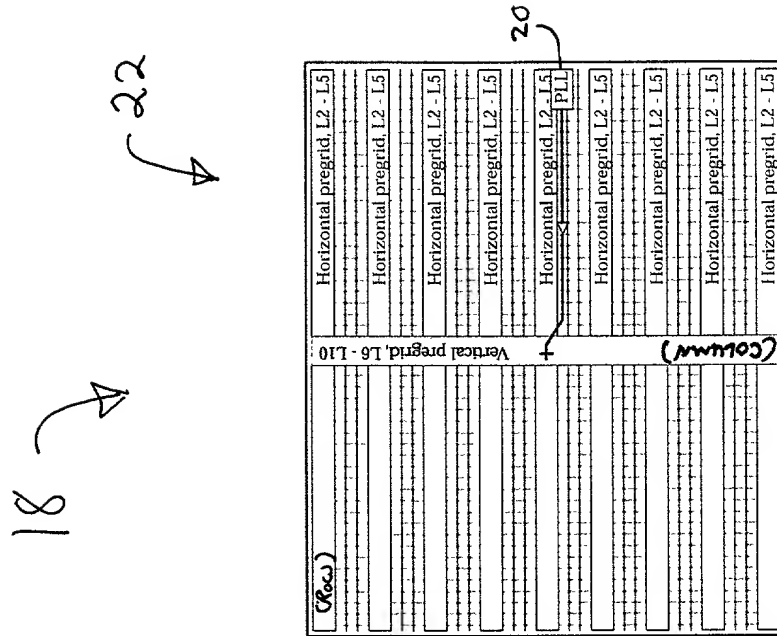


FIG. 5

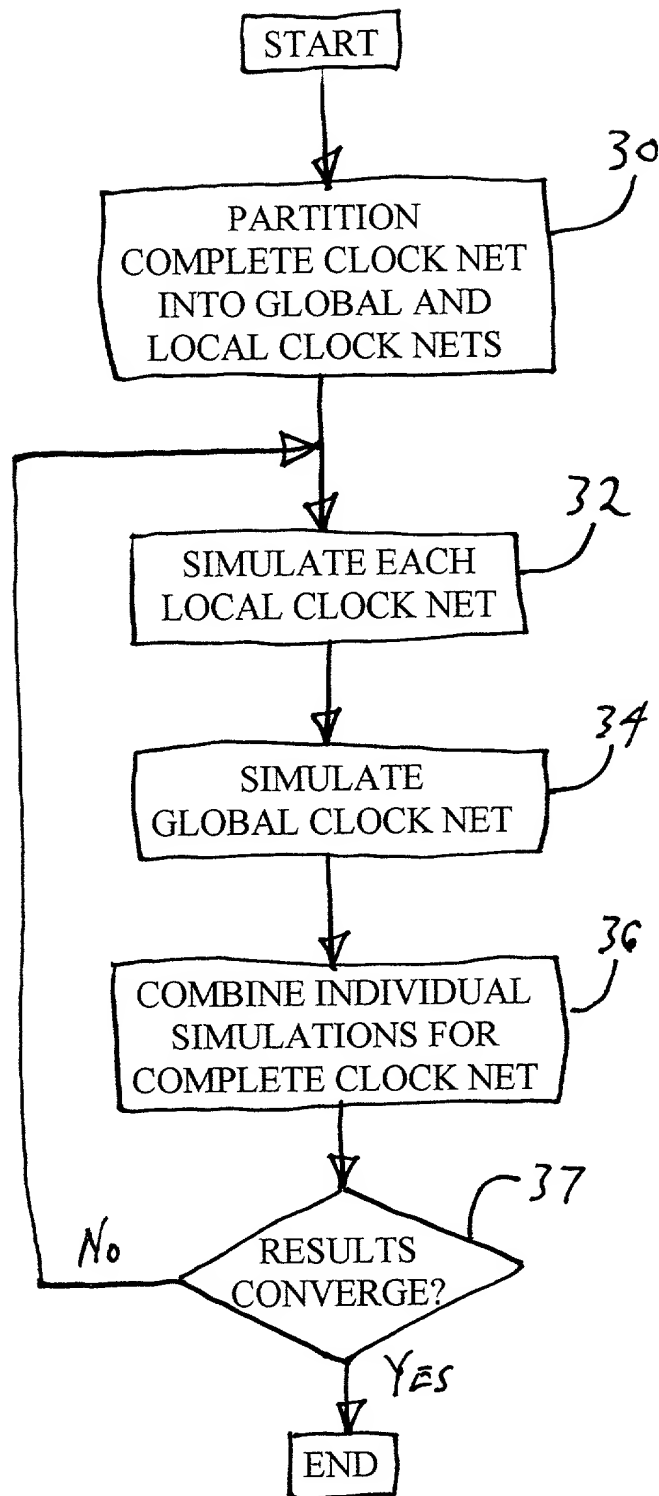


FIG. 6

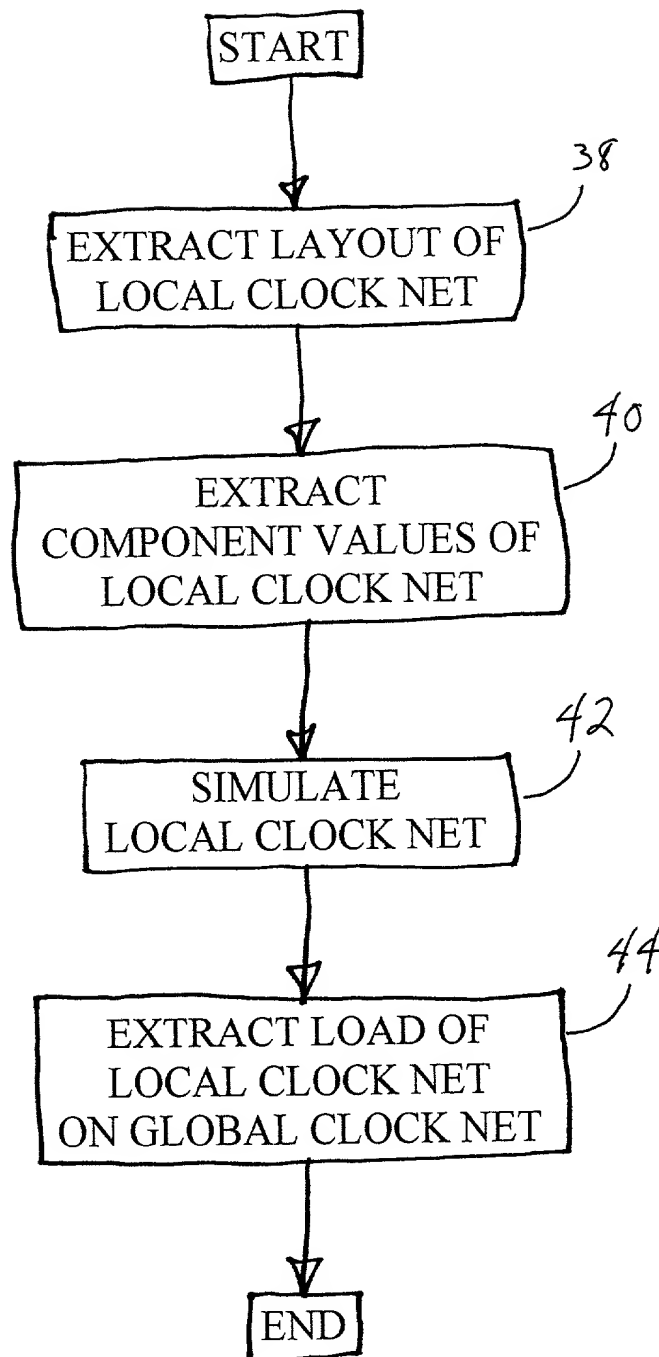


FIG. 7

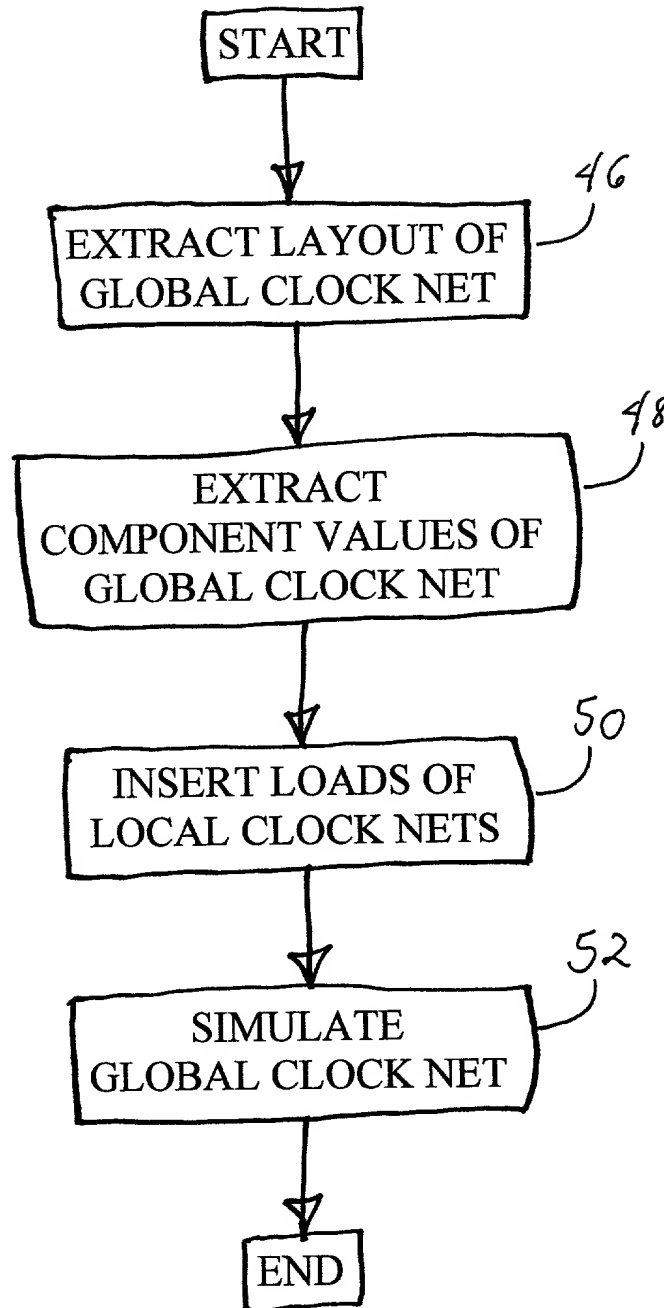


FIG. 8